Diet in Different Co-morbid Conditions

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Food acts as Medicine, to Maintain, Prevent, and Treat Disease.

Diet & Food

- **Diet** is the sum of food consumed by a person
- **Food** is any substance consumed to provide nutritional support for the body

Nutrition

- Nutrients are the nourishing substances in food that are essential for the growth, development and maintenance of body functions.

Nutrient Classification

Macronutrients

- Those which the body requires in large amount e.g. protein.fat,carbohydrates
- These requirement are measured in grams.

Micronutrients

- Are those which the body requires in small amounts.
- These reqiurements are measured in milligrams.(1/1000 gm) and micrograms (1/1000000 gm) e.g. vitamins, minerals & antioxidants.

Healthy Diet → Balanced Diet

- A healthy diet helps to prevent malnutrition, as well as non-communicable diseases (NCDs), including diabetes, heart disease, stroke and cancer.

- Energy intake (calories) should be in balance with energy expenditure

Major Components of a complete and Balanced Diet

Calorie Calculation

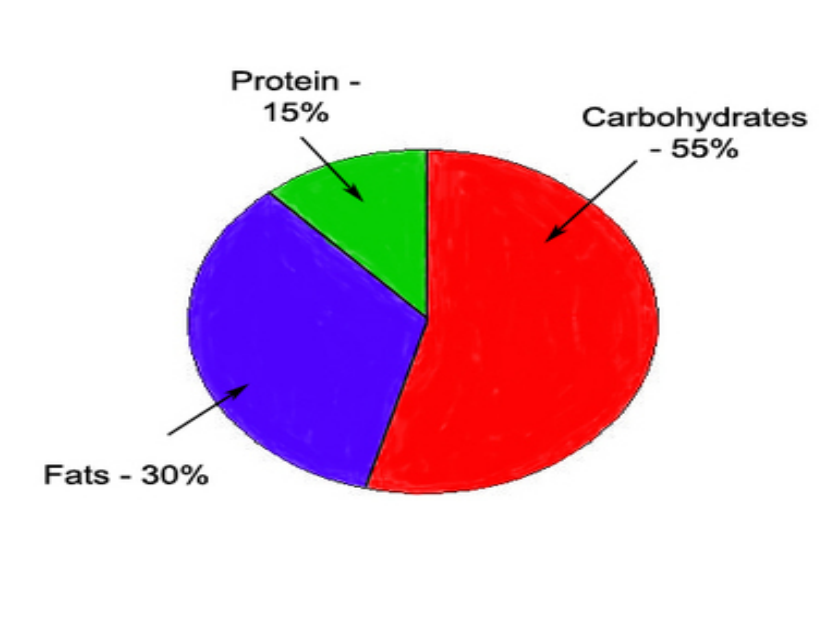
- The number of calories in a food is a measurement of the amount of energy stored in that food.
- The average person needs to eat about 2,000 calories every day to maintain their weight.

Depends upon

- Age
- Gender
- Physical activity

Proportion of food constituents

% of food contituents



Food value

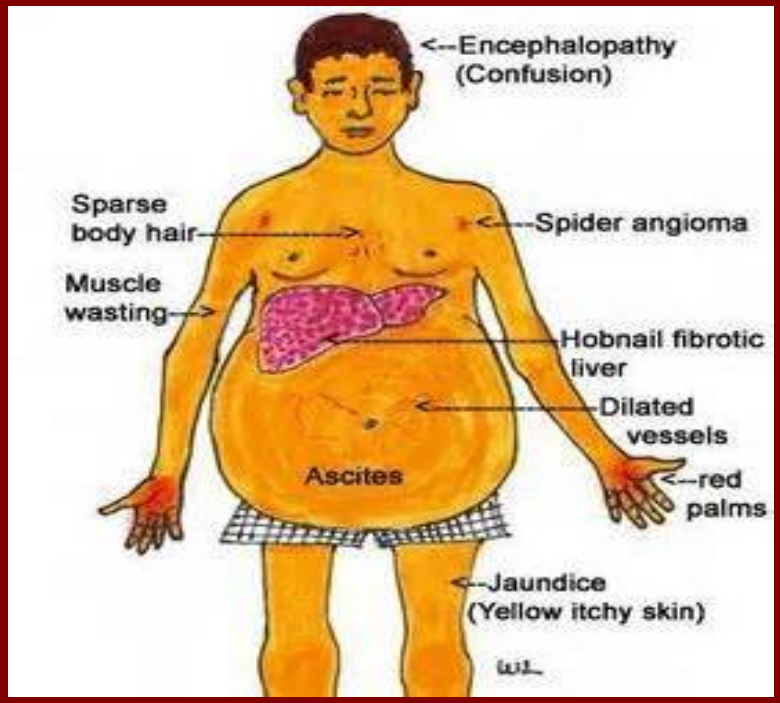
- 1 g CHO=4cal
- 1g Fat=9cal
- 1 g Protein=4 cal

2000 Kcal diet

Energy	2000Kcal
Total fat	600Kcal ÷ 9=66gm
Saturated fat	Not> 20 gm
Carbohydrate	1100Kcal ÷ 4 =275gm
Total sugar	Not>10%=50gm
Protein	600Kcal ÷ 4=75 gm
Fibre	At least 5%=25 gm
Sodium(salt)	Not>6 gm

Imbalance between intake & expenditure

Diet in Liver Disease



Acute Hepatitis

1. Patient experience anorexia,early satiety and fatigue, usually do not accept solid food, hence light food in the form of fruit juice, soft drinks and glucose is acceptable, normal diet of 3000 Kcal should be advised as appetite returns.

2. Generally individual with hepatitis will be to eat a regular diet
3. Need to be evaluated to avoid malnutrition from suboptimal intake of calories,protein and micronutrient

Acute Hepatitis

4. Good amount of protein and carbohydrates intake should be encouraged.
5 Patients may benefit from oral,liquid nutritional supplement
6. In severe cases,some may require enteral or parenteral nutrition

Choronic Hepatitis

- No single recommended diet
- Not much deviation from nomal healthy diet
- Enough calories
- Right amount of protein

Chronic Hepatitis

- **Enough vitamins and minerals.**
- **Low-fat meals**
- **Small frequent meals.**

Avoid

- **Alcohol.**
- **Unnecessary medicines**

Diet In Cirrhosis Of Liver

- Understimated
- Difficulty in assesssing nutritional status
- Weight may be hard to assess
- A ‘’liver-adapted’’diet is just as important as medication
- Many patients leave hospital without first having been given advice by a dietician

Diet In Cirrhosis Of Liver

The goals of dietetic treatment are :

- Prevention or correction of malnutrition
- Improving liver function
- Avoiding catabolic state which may trigger hepatic encephalopathy
- Providing increased amount of branched-chain amino acids
- Management of the formation of ascites and oedema

Diet In Cirrhosis Of Liver

Compensated cirrhosis

- No dietetic treatment is required
- A healthy diet preferably taking six small meals distributed throughout the day, and absolutely avoid alcohol.
- In no case should protein intake be restricted, because, this will only be harmful
- Daily protein intake should be about 1.2 kg body weight

Diet In Cirrhosis Of Liver

Decompensated liver cirrhosis :

- It is important to assure that the patients is getting the required amounts of nutrition.

- Due to poor appetite, rapid satiety, weakness and fatigue, poor taste of hospital food or of low sodium diet may be culpable in patients not taking adequate nutrition.

Diet In Cirrhosis Of Liver

- ***Decompensated liver cirrhosis***

- There should not be no automatic decision to put patients on a reduced protein diet even in decompensated chirrosis of liver.

Diet In Cirrhosis Of Liver

Principles of light normal diet:

The light normal diet is a type of diet that serves only to avoid symptoms such as sensation of pressure or fullness, pain, nausea, bloating or diarrhoea, which may occur after eating

Diet In Cirrhosis Of Liver

- ***Some intolarent food :***
- Pulses,Circumber,Whitecabbage, mushrooms,Potato salad, Fatty foods, Nuts, Cream.

Diet In Cirrhosis Of Liver

Carbohydrates : Main source of energy, donot raise toxin levels,

1. Roughage- Non digestable parts of vegetable foodstuffs, reduces the toxin level, promotes digestion,slows the raise in blood sugar,reduces cholesterol,improves the sensation of saiety

2. Use of lactulose preparations in cirrhosis of liver

Diet In Cirrhosis Of Liver

- **FATS : Used as a source of energy**
- Fat does not increase toxic levels of ammonia in hepatic encephalopathy
- Disturbance in metabolism may affect the fat soluble vitamins absorption

Diet In Cirrhosis Of Liver

- Sodium : All patients with cirrhosis should,as a rule,be advised to use less salt in order inhibit the development of ascites or oedema
- ***High sodium foods :***

  Emmental cheese, Hard cheese, Mayonnaise, Caviar, Matjes herring, Pickled herring, Corned beef, Bacon, Mustard.

Diet In Cirrhosis Of Liver

- ***Potassium:***
- A potassium rich diet is particularly important for patients who takes diuretics to get rid of fluid, as potassium deficiency can otherwise occur
- All types of vegetables and fruits are rich in potassium

Diet In Cirrhosis Of Liver

Fluids :

- Restriction (500 -1000 ml)- Hyponatremia,edema & ascites.
- In all other cases the amount of liquid taken should be 1.5 -2 litres , as with healthy people.

Vitamins and minerals

- Often shows Deficiency in minerals like zinc, calcium, potassium and vitamins A,D,E,K,folic acid, B1, B2, B6, B12.

Diet In Cirrhosis Of Liver

Hepatic Encephalopathy

- Protein restriction is not indicated in hepatic encephalopathy, except in severe hepatic decompensation
- Vegetable protein well tolerated

Diabetes Mellitus

Polyuria (Frequent Urination) 	Polydipsia (Excessive Thirst)
Polyphagia (Excessive Hunger/Increased Appetite) 	Involuntary Weight Loss

Role of Diet in Diabetes Mellitus

- Optimize blood glucose level
- Achieve and maintain resonable body weight
- Optimize lipid and lipoprotein profile
- Reduce blood pressure
- Prevent and delay long term complications
- Promote overall health through optimal nutrition

Dietary management of Diabetes Mellitus

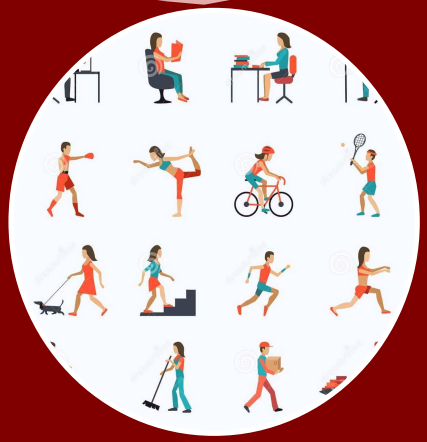
- Each person with diabetes is different
- No one diet that suite all
- Modification of normal well balanced diet
- Expressed in terms of total calories and a ratio of CHO, fat and protein

Construction of Diabetes Diet

1. Calculating caloric need
2. Determining dietary distribution of

3. Dividing the daily requirments into practical healthy meal

Energy requirement



Component Of A Diabetic Diet

2006 Position Statement of American Diabetes Association

Type	% of Total daily calorie intake	Remarks
Carbohydrate	45-65% (55%)	Type and amount of CHO are both important Greatest impact on blood sugar
Protein	12-20%(15%)	Patients with nephropathy should limit protein <10%
Fat	25-35%(30%)	Monounsaturated and Omega -3 fatty acids are the best types Limit saturated fat <7% Minimize trans fatty acids

Nutritional Intervention For

- ***Type-1 DM***
- Tight blood glucose control
- Matching of insulin therapy with diet and exercise
- Eat at consistent time and consistent amount

Nutritional Intervention For

- *Type 2 DM*
- 1. Achieving & maintaining resonable weight
- 2. Life style medication
- 3. Consistency in timing & CHO content of the meal is important

- *Food Distribution*

Type 1 DM

Food distribution should match with insulin therapy

Most people will need 3 main meals + 3 snakes to avoid hypoglcemia

Overweight type 2 DM

3 main meals

- *Ideal/under weight type 2 DM*
- 3 main meals with a small mid-AM & Mid-PM snakes

CHO Recommendation

Some useful tools

- GI index
- Diabetes exchange list
- Plate method

CHO Recommendation

- Choose correct type & amount of CHO
- Helthier CHO sources : high fibre low GI

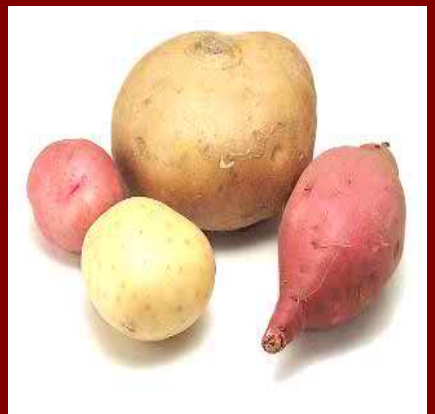
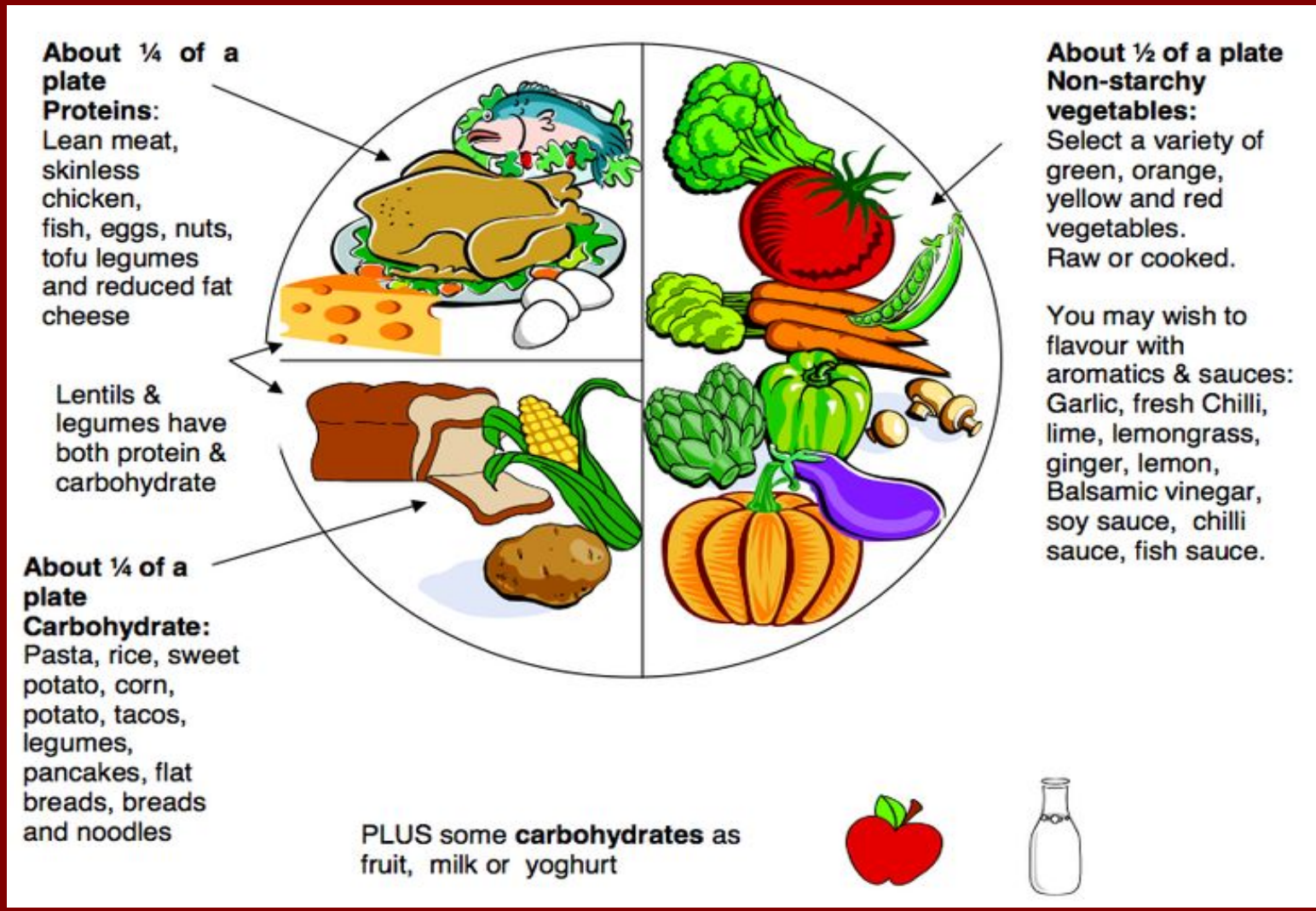
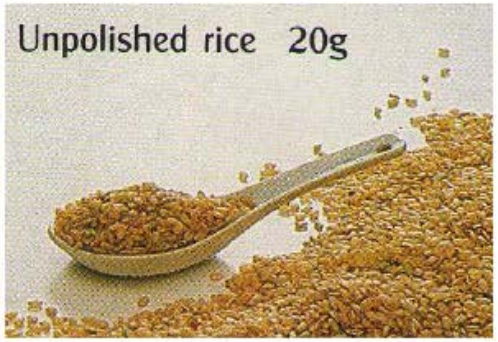


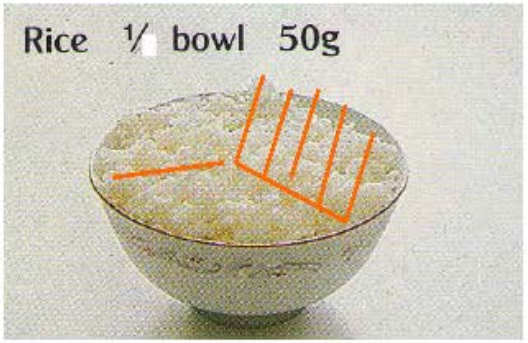
Plate Method

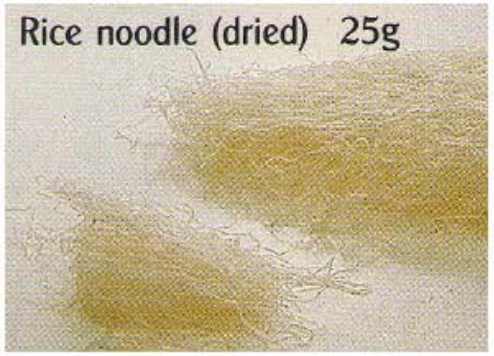


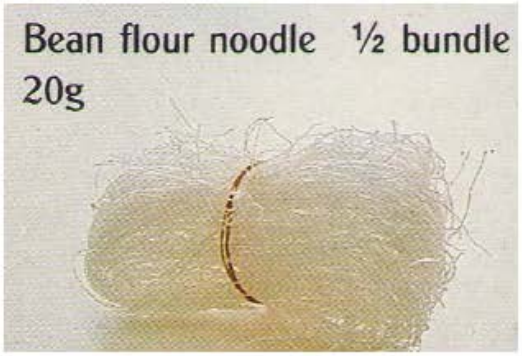
CEREALS, GRAIN PRODUCTS AND STARCHY VEGETABLES

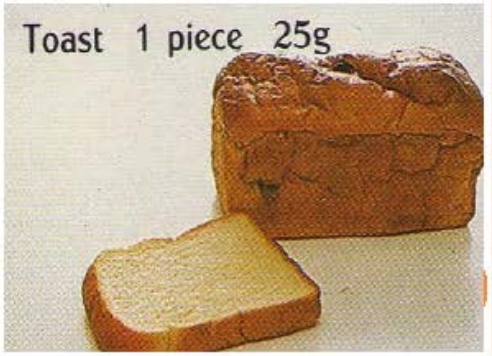
Each exchange contains 15 g carbohydrate, 2 g protein, 0.5 g fat, 75 kcal





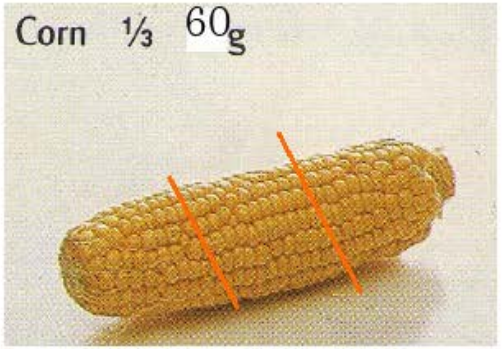


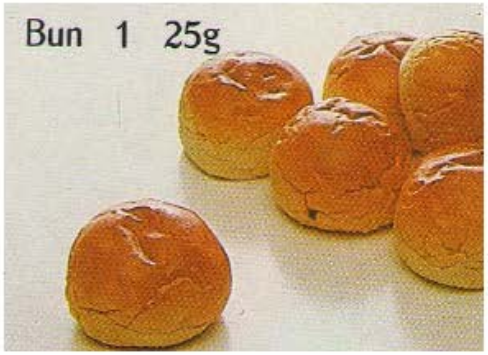


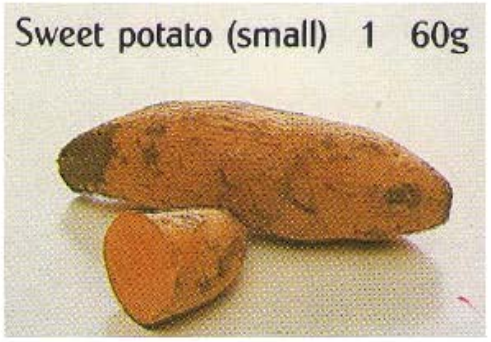


EACH EXCHANGE CONTAINS 15 G CARBOHYDRATE, 2 G PROTEIN, 0.5 G FAT, 75 KCAL

Suitable as snacks







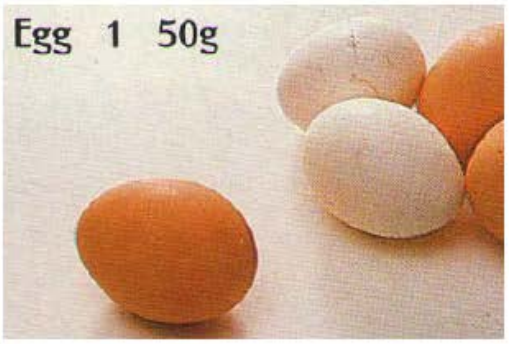
Good Quality Protein

Mostly healthy fish- sea fish(high in omega-3 fatty acid)

Good Quality Protein

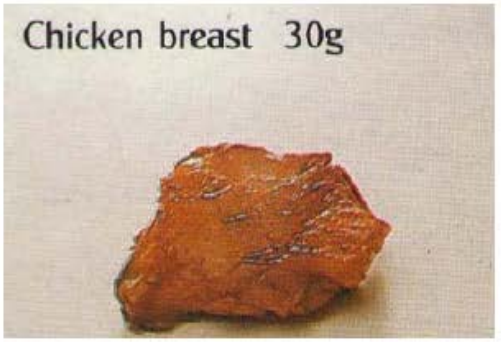
Each exchange contains

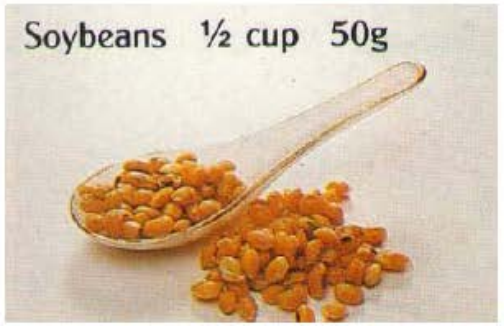
7 g protein, 1 – 4 g fat, and 35 – 65 kcal



FISH, MEAT, EGG & BEANS

Each exchange contains 7 g protein, 1 – 4 g fat, and 35 – 65 kcal





Dietary Fat & Cholesterol

- 25-35% of total calorie intake
- Limit saturated fat<7% of total daily calorie
- Minimize amount of trans fat <1% of total calorie
- Limit dietary cholesterol <200mg/d

Cut down the saturated fat

Cut down the saturated fat

ADD FIBER WITH LOTS OF VEGETABLES & OTHER HIGH FIBER FOODS

Fruits

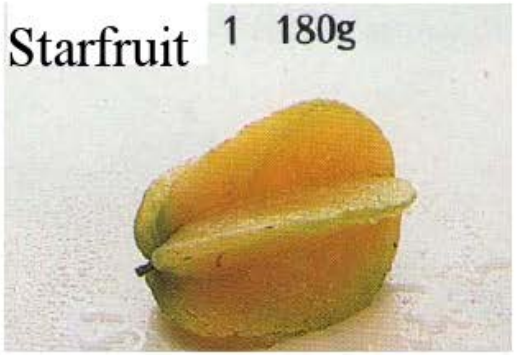
Fruits

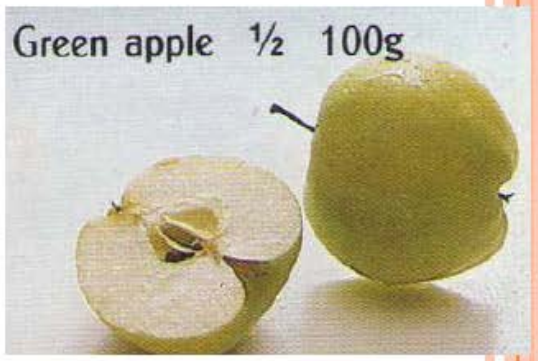
- Good source of vitamins, mineral, fibre & antioxidant.
- Best taken taken fresh
- Minimum amount of peeling

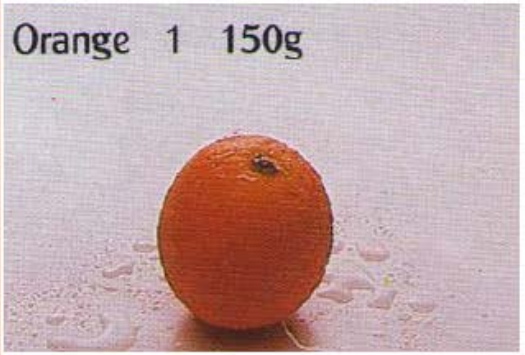
FRUIT IN THE DIABETIC DIET

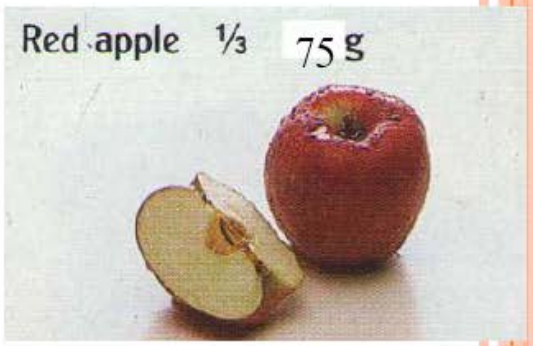
- Generally, 2 – 3 fruits exchanges are allowed / day.

Each exchange contains 15 g carbohydrate, 60 kcal

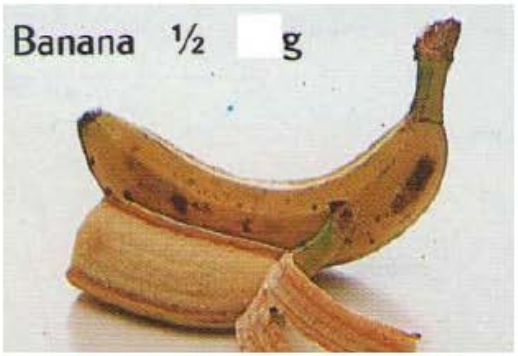




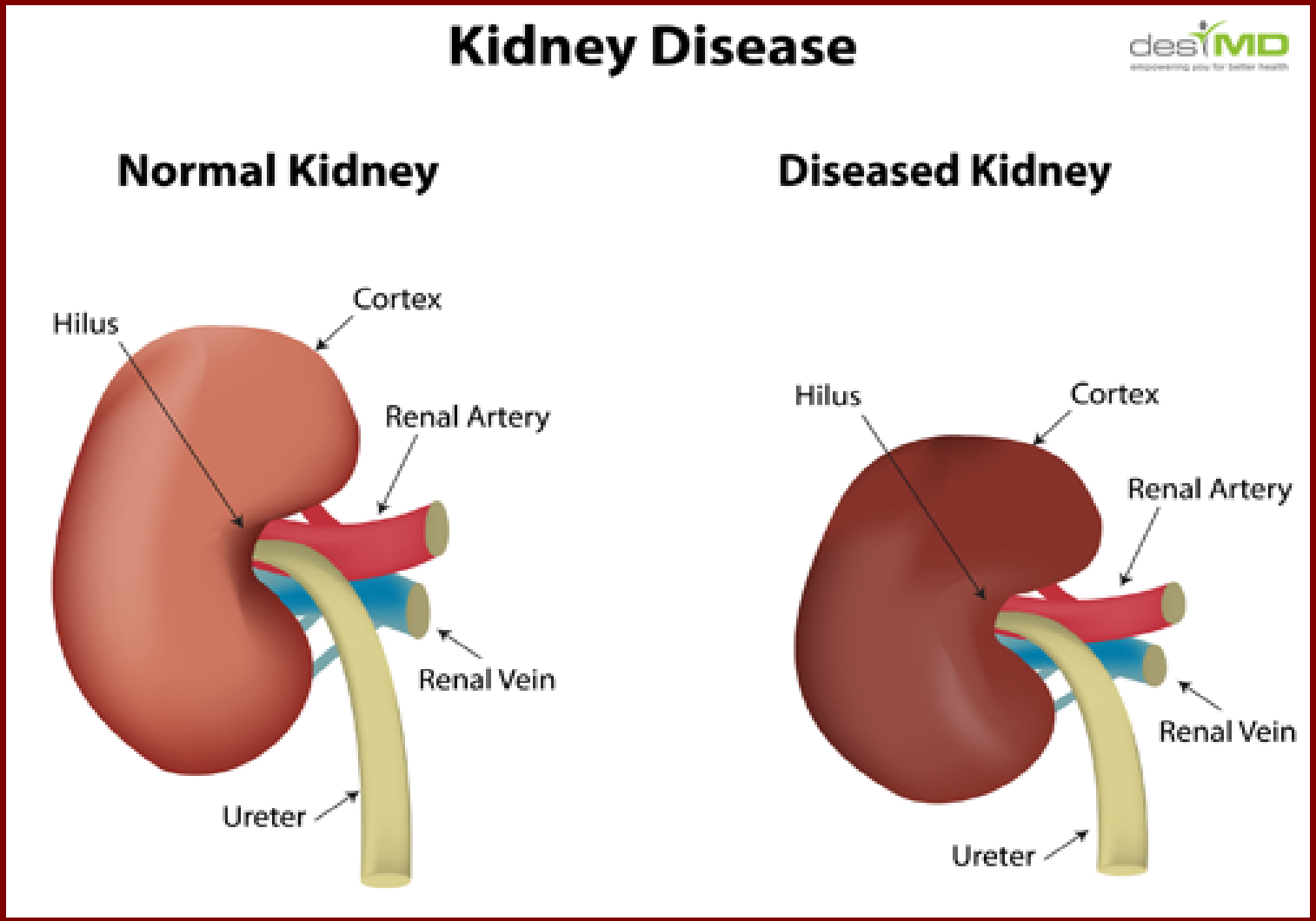




EACH EXCHANGE CONTAIN 15G CHO, 60 KCAL



Chronic Kidney Disease(CKD)



Diet in Chronic Kidney Disease (CKD)

Aim:

- To keep the levels of fluid, electrolytes & minerals in the body balanced in the predialysis & in dialysis stage
- The diet is also specific in different syages of CKD.

Diet in Chronic Kidney Disease (CKD)

The following nutrients level should be carefully monitored in CKD :

a) Protein –RDA-.8gm/aversion to certain protein

b) Phosphate-.7gm

c) Calcium

d) potassium- 4.7gm-aiammediate boiling/double cooking

e) Sodium -1.5 gm&

f) Fluid

Diet in Chronic Kidney Disease (CKD)

- The diet should also contain enough calorie values to aviod malnutrition
- In predialysis stage restriction of protein,sodium,phosphate & potassium is needed with sufficient amoiunt calories.
- The diet in dialysis stage should be rich in protein but restricted in fluid, sodium, potassium & phosphate with sufficient supply of calories.

Diet in Unconscious Patient

Diet in Unconscious Patient

- Unconscious is state in which a patient is totally unaware of self & external surroundings & unable to respond meaningfully to external stimuli.
- Unconscious patient have no control over themselves & thus dependant upon others.

Diet in Unconscious Patient

- Nutrition &fluid balance is one of the most important aspect of general management of unconciouss patient
- Unconciouss spans a broad spectrum from momentary loss of conciouss to prolonged coma that may last weeks, months or even years.
- Feeding– Enteral-NG tube/gastrostomy/ jejunostomy

Diet in Unconscious Patient

- The cause of unconsciousness will dictate the length of coma & prognosis.
- Yet the immediate needs of the unconscious patients are similar, whatever the underlying cause.
- Consider enteral feeding to provide nutritional support.
-

Diet in Unconscious Patient

- Ensure correct tube placement
- Formulas for tube feeding comercially prepared provide complete nutritional balance & some requires no digestion

Diet in Unconscious Patient

- Frequent Checking the tube placement

- Monitor & record fluid balance.
- Administer IV fluid as required.
- The unconscious patient is dependant upon the health care team to deliver the correct nutritional requirments

Conclusion

- The patient with liver disease should follow the principles of a balanced healthy diet except in severe hepatic decompensation.
- But he should absolutely avoid alcohol in any form.

Conclusion

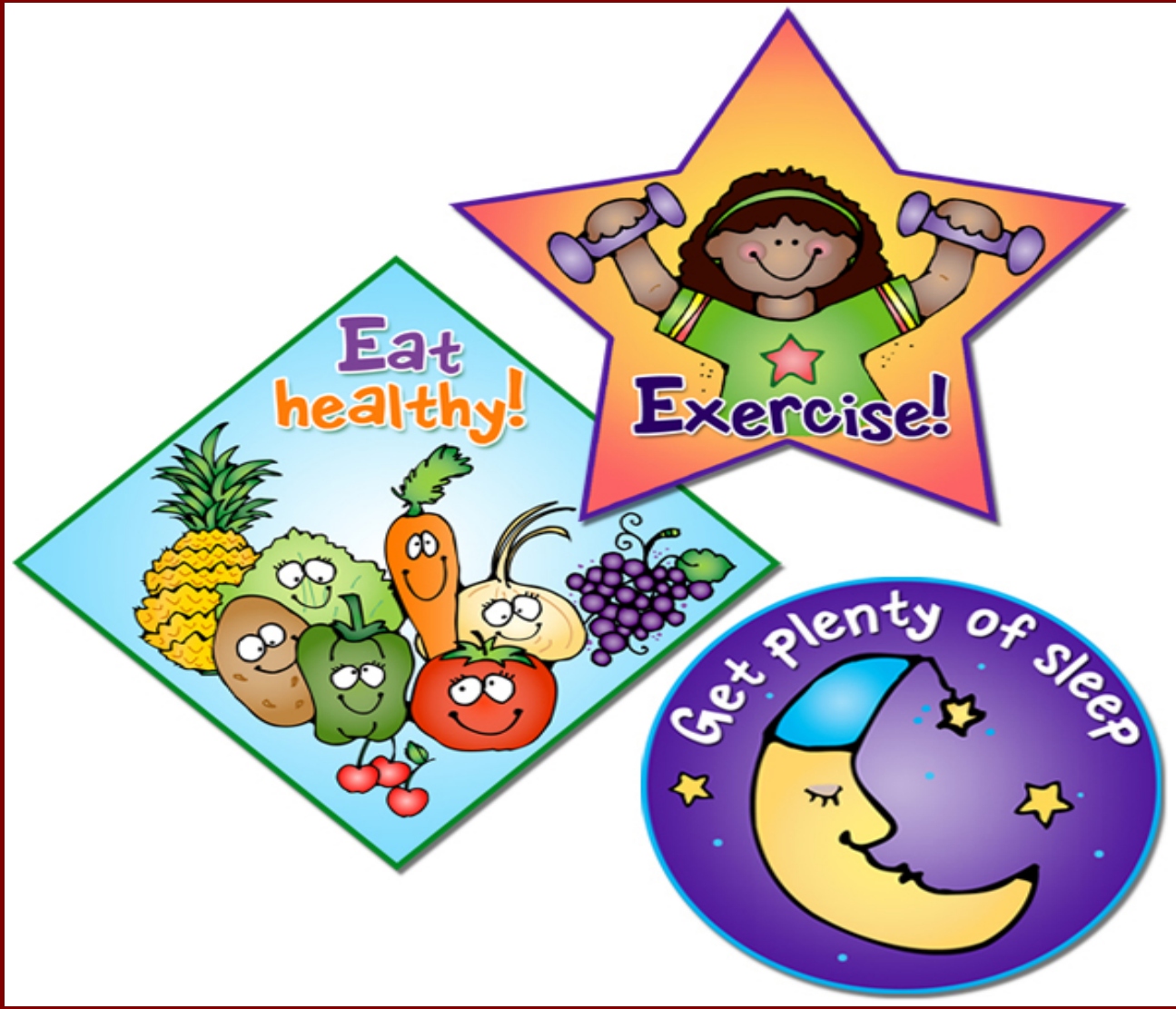
- A healthy eating plan comprising eating plenty of fibres, skiping fat diet,choosing whole grains not only prevents diabetes but also has got therapeutic benefit in managing diabetes mellitus.

- Protein ,fluid & electrolyte balance is the key determining factors in the dietary management of CKD patients,

Conclusion

General management of unconscious patient includes provision of nutrients, electrolytes & fluids either in enteral or parenteral route.

Acknowledgement

- Dietary Management of Diabetes—Bshra Tariq, consultant dietician ,Darul Sehat Hospital.
- Diet & Diabetes Mellitus.- Mohammed Badar
- Module 4: The Diet for Chronic Kidney bDisease- National Institute of Diabetes and Digestive and Kidney Diseases
- Care of Unconcious Patient-Hilary Lubuto
- Feeding Adult Patients-NurseReview.Org

Thank You Very Much for patience Hearing